The Sharable Content Object Reference Model (SCORM) has evolved in recent years as a standard for linking digital interactive Learning Objects (LO) into digital learning management systems (LMS) [1]. This standard has been used in a variety of teaching and learning contexts [2][3][4][5]. We are experimenting with SCORM in teaching and have developed a number of SCORM compliant LOs. In particular we have authored SCORM LOs by application of the freely available software Courselab, and have hosted these LOs within the Learning Management System (LMS) Blackboard Vista.

In one case study we have deployed a SCORM LO for the purpose of testing the numeracy capabilities of new students for business-related courses. Within this LO 20 mathematical problems were presented, based on variables that were created through random number generators. This ensured that each student received an individual problem within the specific scope of the task. The students had a number of attempts, and if these had been used up, the solution was displayed, and the student could try the problem again, with a different set of numbers. After the problems had been solved by the student, the SCORM module gave an automatic assessment of the numeracy capabilities of each student, classified into various categories as defined by the scope of each of the 20 problems. In this study the SCORM module had not been hosted by a LMS but was run as standalone, due to limitations of our LMS regarding the handling of variables (in SCORM 1.2 there is a limit of 100 Javascript variables). This meant that the students’ results were not automatically transferred into the gradebook of the LMS. However, since this was only an informal assessment of the students’ capabilities without grading, it was not a problem that this test was not embedded within the LMS. Feedback provided by students was very positive, and also the teaching staff found it very effective to use. The online evaluation has been carried out with the cohort of students who used the LO in the winter semester 2009/10 to receive feedback on their views as to ease of use, appearance of the test and several other areas to be presented in the full version of the paper. In winter semester 2010/11 there are further students accessing this mode of numerical evaluation, and it has been made available on the University repository to be used as required by others. A second case study investigated the employment of SCORM as the main electronic teaching method within a technical field. While this module used traditional lectures and tutorials as the main teaching method, the SCORM objects were hosted within the LMS and provided the backbone of the learning material. Consequently, the student’s were enabled to review the lecture slides as SCORM slides and to solve small assignments and quizzes given within the SCORM module. Because the LOs were embedded within the LMS, the progress of each individual student could be monitored and on that basis important feedback is possible.

Some technical problems occurred related to the embedding of the SCORM objects within the LMS, which made the overall process of teaching and grading slightly cumbersome but which did not present insurmountable difficulties. Overall the use of SCORM LO appears to be a method well suitable for interactive teaching. The interaction from the student with the virtual learning environment (VLE) does mean that it can be used for distance learning students as once the LO is made available, the tutor is mainly a facilitator for the technology rather than an assessor.

References:


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